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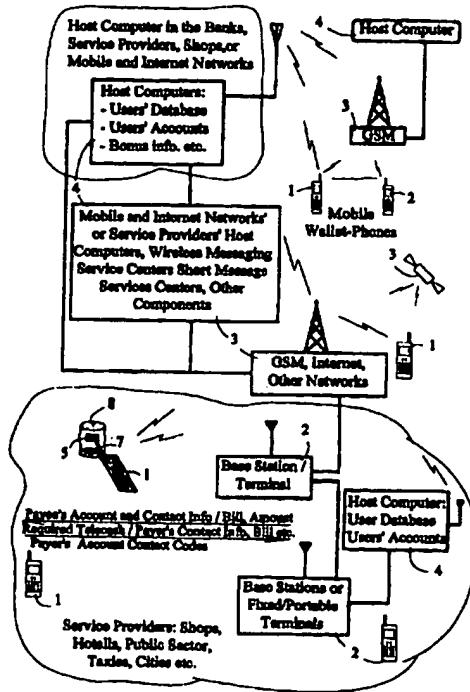
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(21) International Application Number: PCT/FI97/00315 (22) International Filing Date: 26 May 1997 (26.05.97) (30) Priority Data: 962553 24 May 1996 (24.05.96) FI 971248 24 May 1996 (24.05.96) FI 970767 24 February 1997 (24.02.97) FI (71)(72) Applicant and Inventor: VAZVAN, Behruz [FI/FI]; Vuokselantie 10 B, FIN-02140 Espoo (FI).	(81) Designated States: US, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
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(54) Title: REAL TIME SYSTEM AND METHOD FOR REMOTE PURCHASE PAYMENT AND REMOTE BILL PAYMENT TRANSACTIONS AND TRANSFERRING OF ELECTRONIC CASH AND OTHER REQUIRED DATA

(57) Abstract

A wireless/cellular terminal (1) and method is provided for allowing a user to perform remote purchase and bill payment transactions, and transferring of telecash and other required data to other terminals (2) or to the remote host computers (4) without using modem. In one embodiment, the terminal includes means for receiving and transmitting of bills and electronic cash directly to/from other terminals in a connectionless way without using the network (3). In the method of this invention, the payee's details such as account number, contact codes are sent/broadcast to the payee's terminal (e.g. mobile phone). The payer activates the payee's details upon which the bill and/or the required amount of telecash is sent to the payee's terminal or host computer. The terminal of this invention can operate as both the user's cellular/wireless electronic wallet and as his cellular/wireless telephone, thus providing a Mobile Wallet-Phone (MWP). By using MWP the user is able to send/receive payment messages and electronic cash directly to/from other terminals under a small terminal-to-terminal (1, 2) radio coverage or via the network (3). In another embodiment, the method of this invention provides a P-PIN (Payment-Personal Identification Number) process for user authentication which, when required, is used (in addition to the PIN-code which is used for mobile telephone services) to verify that the user has the right to use the terminal as his electronic wallet for paying by telecash or account transferring. In another embodiment of the method of this invention a bill inquiry is sent from other terminals or from the host computer to the user's terminal upon request of the user or automatically and/or continuously whenever the provided service requires so. In this case the user's terminal can be also a personal computer or television connected to the fixed internet or operating wirelessly.



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**Real Time System and Method For Remote Purchase Payment and Remote Bill
Payment Transactions and Transferring of Electronic Cash and Other Required Data**

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Background of the Invention

Field of the Invention:

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This invention relates to systems for purchase and bill payment transactions and transferring of electronic cash and also terminal-to-terminal wireless transmission of the required data without using modem.

15 Description of the Related Art:

The WO96/04618 publication has disclosed a terminal which can perform purchase payment and bill transactions via a modem coupled to or integrated into the terminal. The whole system provided in above publication is a modem-based system where the user's credit card information and the 20 terminal's serial number are sent to a host computer for validating which after authorization by card issuing authority and a host computer the user is given the right for remote purchases. In its portable form the terminal also uses modem which is coupled through the telephone circuit to a transmitter/receiver. The portable terminal is not a wireless/cellular terminal so it does not exploit the wireless messaging for direct communication but the terminal is by means of a modem and 25 circuit-switched call connected to a host computer and the payment procedure is performed during the established call. Moreover, in the above system transaction requests are connected to the remote host system through telephone line and the system is based only on circuit-switched communications whereby the credit card validation is performed during an established continuos call. Furthermore the above-like systems does not utilize electronic cash for purchase or bill transactions.

30 The GB2276258 publication disclose a system for utilizing credit information to verify and accept payment for an order on site at the door of a home contemporaneously by means of credit card. The above system is also a modem-based system and is based on circuit-switched communications neither messaging means of wireless communication for purchase and payment transactions. Neither the above system uses electronic money for payment transactions. In all already 35 known methods the user establishes a circuit-switched call for performing transaction during the established call.

In the above-like systems the communication speed is low because of using modems or data cards which also makes the terminals more expensive. The communication is also expensive for the user because of the circuit-switched calls and the user, in some cases, is also required to purchase a

separate terminal for his purchases or bill payment transactions. Furthermore the user's credit information (credit card number) communication over the open networks is not secured. In all existing systems it is the customer whose credit card number is taken by the service provider for charging the customer whereas in a secure payment system the customer is not required to give any credit information to the third parties. There continues to exist a need to further improve the efficiencies of the payment systems.

Summary of the Invention

10 It is an object of this invention to provide a secure payment system wherein the payer takes the account/contact number of the payee in order to pay to the payee's terminal or account. It is another object of this invention to provide a wireless/cellular terminal which can perform purchase payment and bill payment transactions and be used as the user's electronic wallet. It is another object of this invention to provide a wireless/cellular terminal to allow users the ability to conveniently and 15 remotely in a connectionless way perform these financial transactions and send and receive electronic money on terminal-to-terminal basis (as wallet-to-wallet) without using the network for transferring the required cash. It is another object of this invention to provide a wireless/cellular digital terminal to allow smart card holders to also remotely perform these financial transactions and also terminal-to-terminal transferring of electronic money. In this invention in order to prevent 20 forgery the payee's account number, whereto the funds can be transferred, is delivered to the payer and not the payer's account number to the payee, which could easily be used by unauthorized users.

It is another object of this invention to provide a service as an expansion of value-added data services of currently existing mobile communications systems. It is another object of this invention to utilize the wireless or cellular terminals such as mobile phones, pagers etc. to be used as the 25 inventive terminal (Mobile Wallet-Phone) thus creating a high value added service for mobile communication and providing the users one terminal which can be used as mobile telephone or pager when needed and as user's electronic wallet when required. Another object of this invention is to provide for wireless or cellular connectionless messaging with a remote host computer without establishing a circuit switched call.

30 It is yet another object of this invention to provide a connectionless method for terminal-to-terminal transmission of electronic money and payee's details such as contact code or number, account code or number, and bill without contacting the payee. It is another object of this invention to provide a connectionless method for broadcasting the payee's/service provider's details such as account number, contact codes, and the payable bill to the user's terminals continuously or whenever 35 required. It is yet another object of this invention to provide a method to send a bill format to the user's terminals in a connectionless way and whenever user requests it, to be filled and sent back to the required host computer or another terminal. It is yet another object of this invention to provide a terminal which is able to communicate with another terminal directly and without using the network for transmission of the required data. It is another object of this invention to provide a terminal

which is able to configure an adjustable radio coverage area (e.g. between one millimeter to five meter) for terminal-to-terminal wireless and modemless data transmission.

According to one embodiment of this invention, a wireless terminal, such as SIM-operated (SIM: Subscriber Identification Module) portable terminals such as mobile phones or pagers, portable 5 wireless personal computers can perform terminal-to-terminal remote purchase payment transactions, transferring of electronic money and user's details such as account number, contact code, address etc. in a connectionless way without requiring that the payee/payer contact each other or establish a circuit-switched call. The terminal includes means for receiving/transmitting of required information in a terminal-to-terminal wireless data communication without using the 10 network for transmission the information. The terminal can produce a small and adjustable radio coverage area wherein the terminal-to-terminal sending of the user details and transferring of electronic money and other information can be done using wireless messaging and in a transparent way to other terminals/users. In another embodiment of the invention the wireless/cellular terminal or service provider's terminal (such as cash register, computer etc.) or base station broadcasts the 15 payee's/service provider's account and bill information to all or to the required users' terminal which are under the radio coverage of the payee's/service provider's terminal/base station. Then the payer's terminal monitors the transmitted/broadcasted information which after the user activates the payee's details and sends the bill and the payee's details and when needed the required electronic money (telecash) to the payee's terminal or account at the host computer. In another embodiment of this 20 invention the user, by sending a message, can request the host computer or the payee's terminal to send the bill or bill format to the payer's terminal, in a connectionless way (using for example internet or short messaging means of mobile networks). Then user accepts the bill or fills in the bill format (a bill inquiry) the required information (together with the required amount of telecash, when needed) and sends it back to the host computer or the payee's terminal for receiving/accepting or 25 performing the bill.

In this invention the user's details such as account number, contact codes, numbers are sent or broadcasted to other terminal, directly or via base stations, or via network, in order to be used by payers for remote purchase transactions, bill payment, transferring of telecash and other required data from terminal-to-terminal or between the terminals and host computer.

30 Other objects and many of the attendant features of this invention will be more readily appreciated as the same becomes better understood by reference to the following detailed descriptions and considered in connection with the accompanying drawings in which like reference symbols designate like parts throughout the figures.

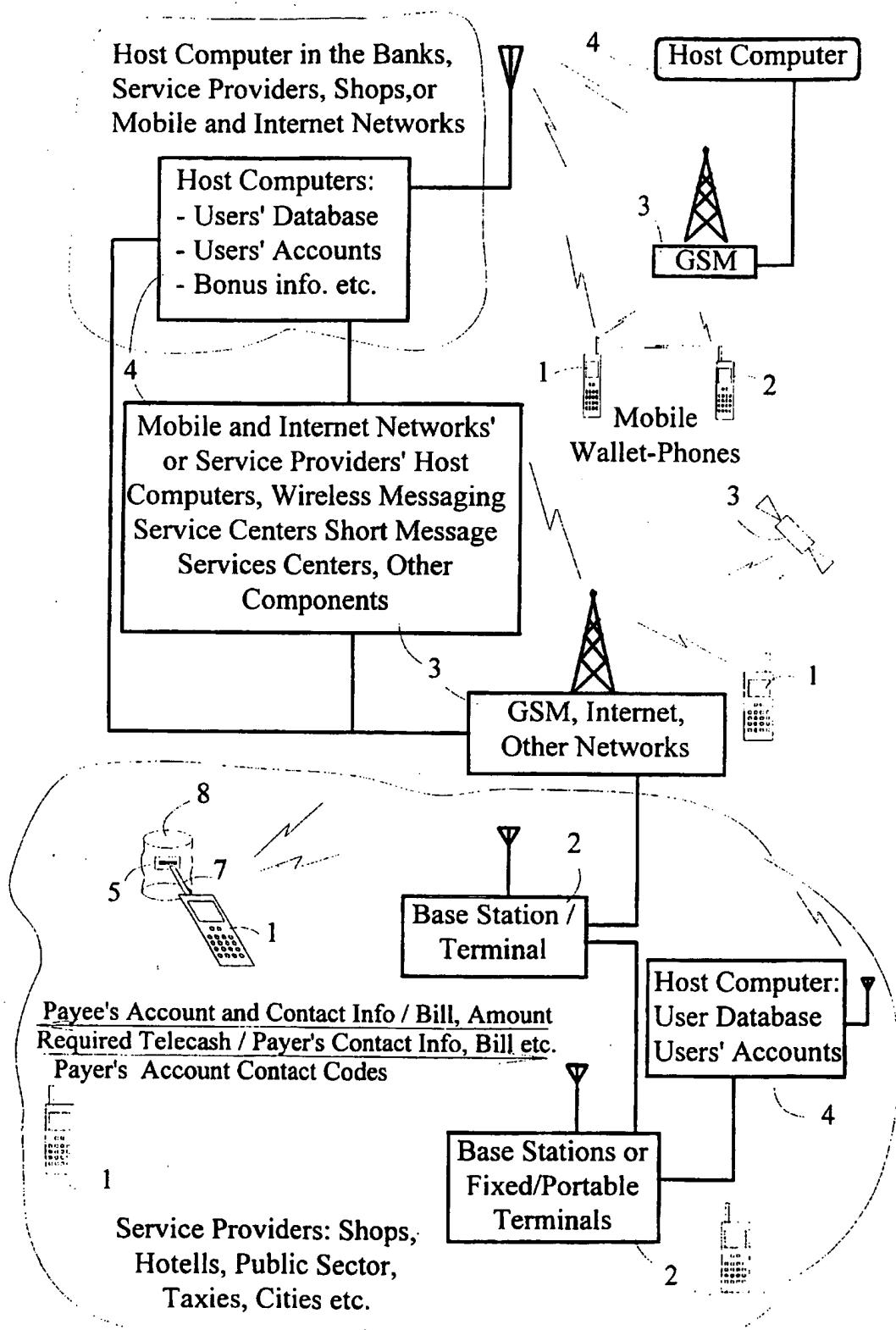
35 Brief Description of the Drawings

FIG. 1 illustrates a general overview of the system including cellular/wireless and internet network, host computers and Mobile Wallet-Phones utilized in the invention.

FIG. 2 is a flow chart presenting the user authentication, sending the payee's details, bills, bill 40 inquiry, performing the transactions, sending the required amount of telecash to the payee's terminal/account in accordance to the present invention.

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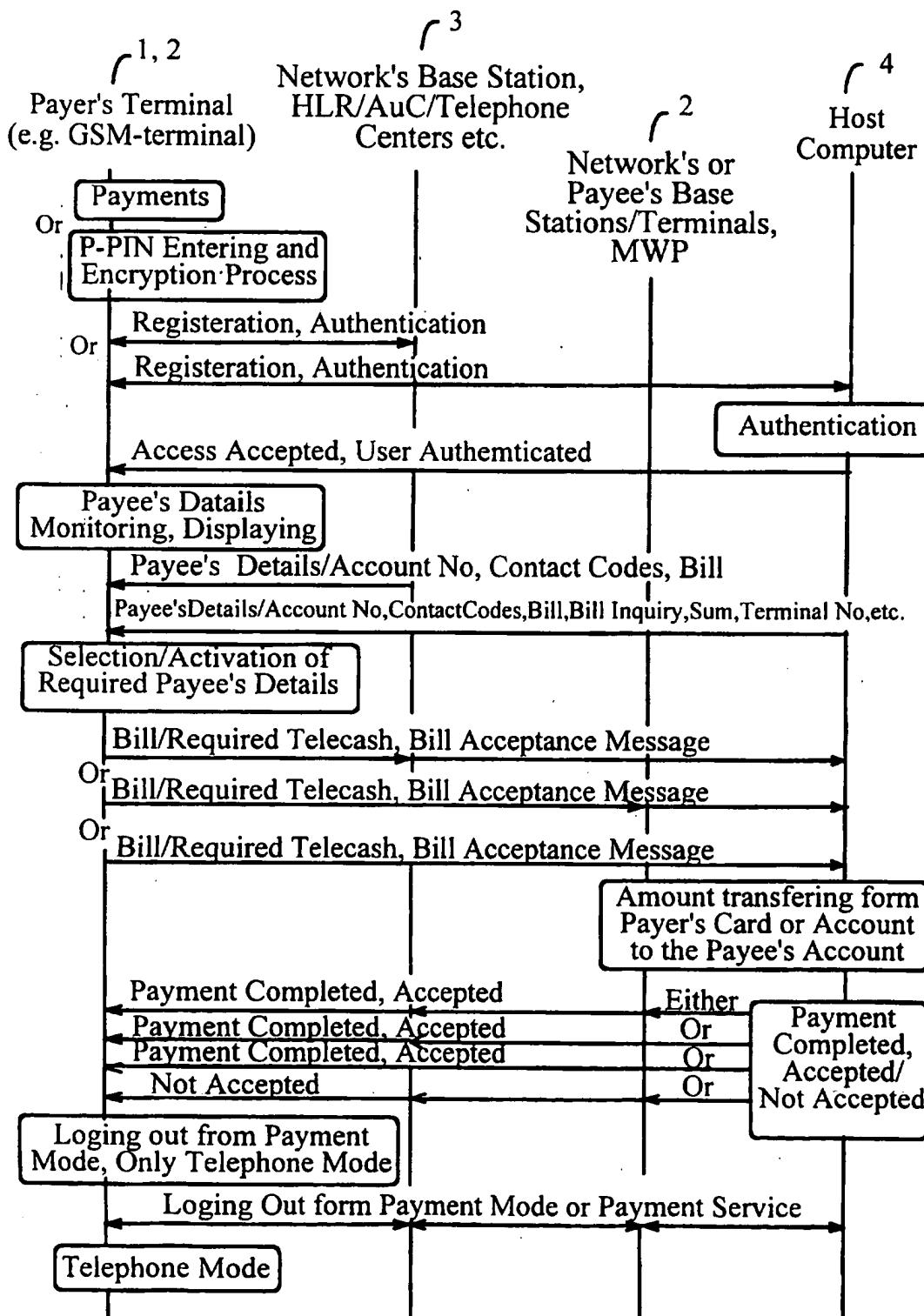
FIG. 1



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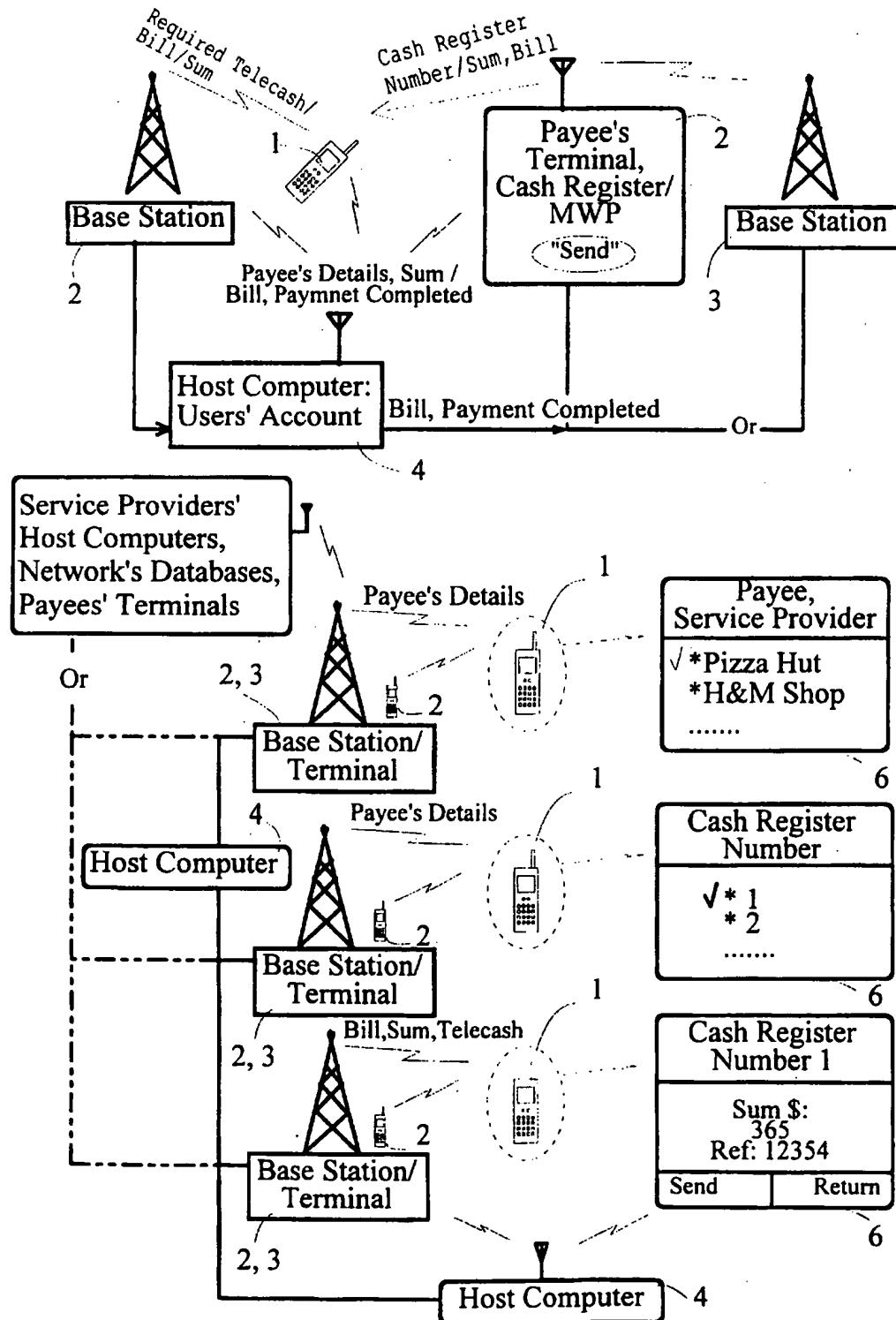
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FIG. 2



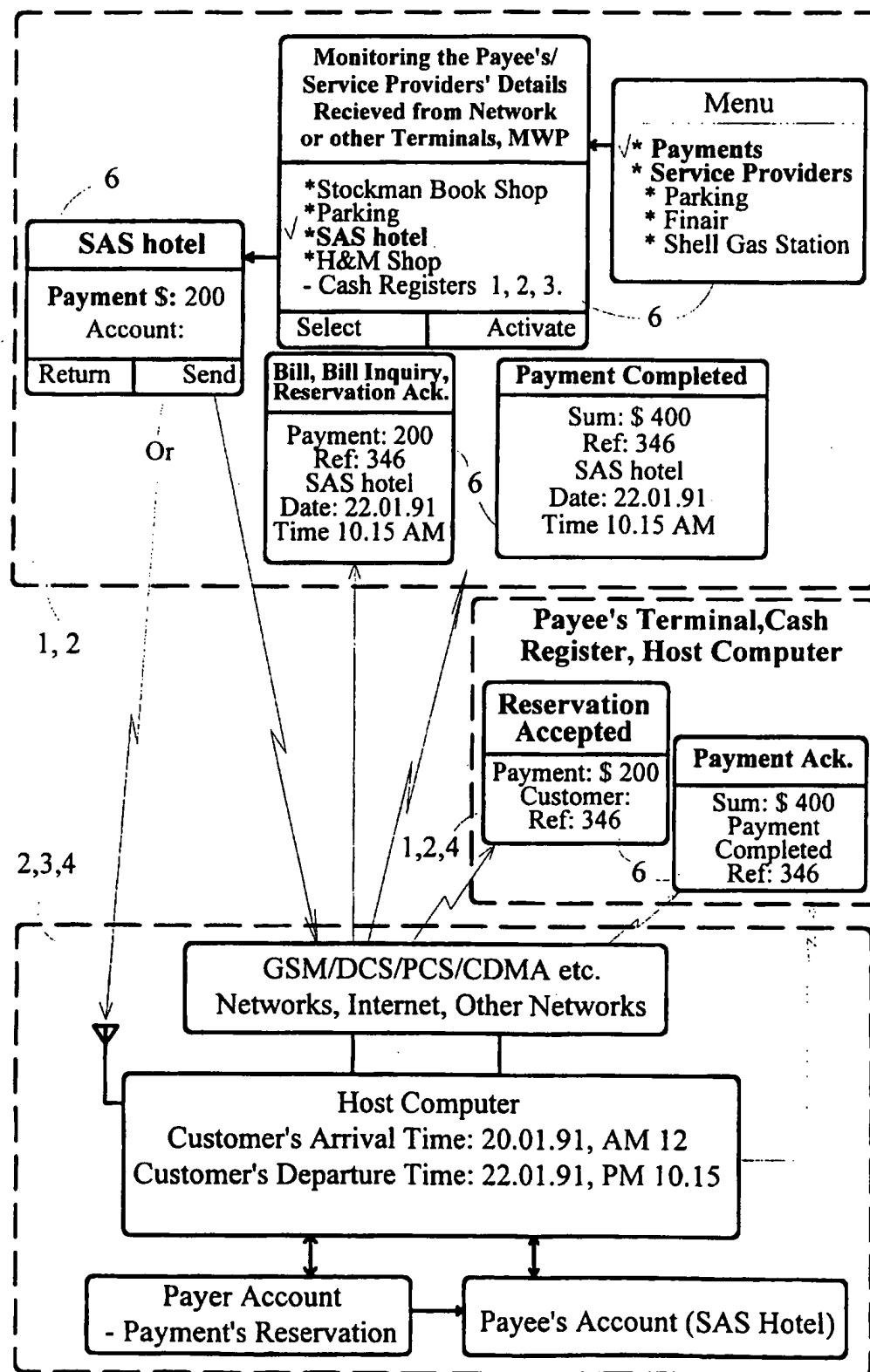
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FIG. 3



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FIG. 4

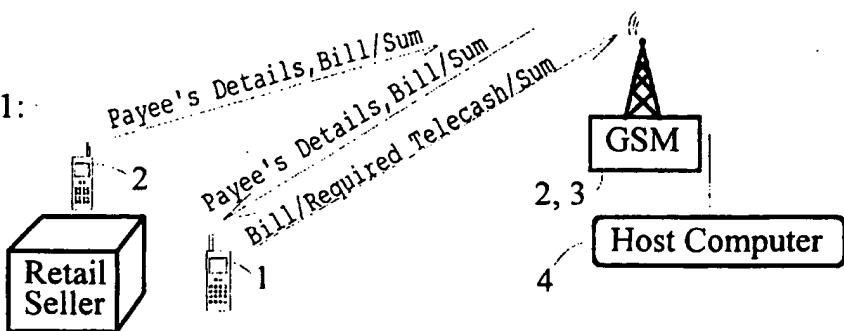


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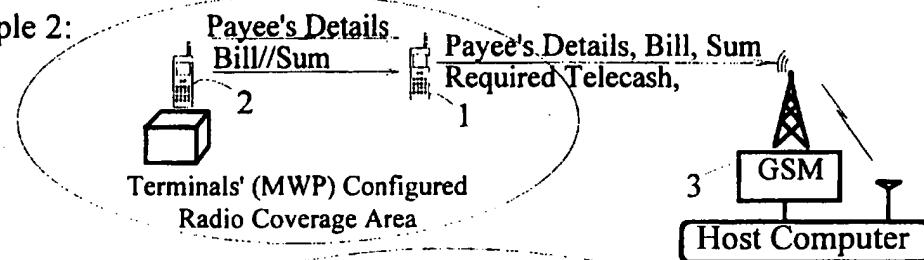
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FIG. 5

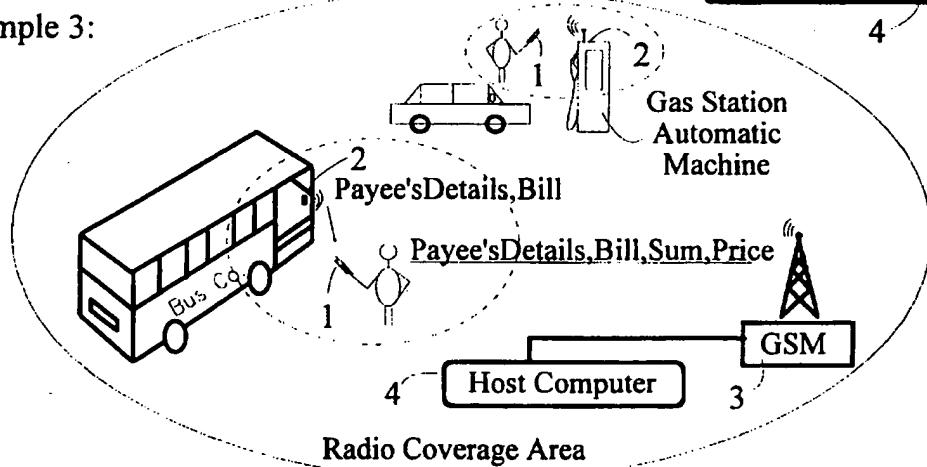
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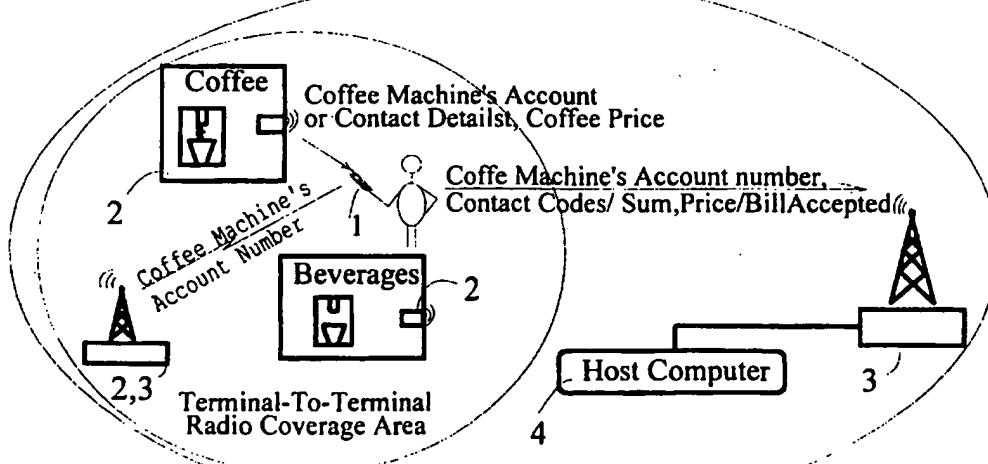
Example 2:



Example 3:

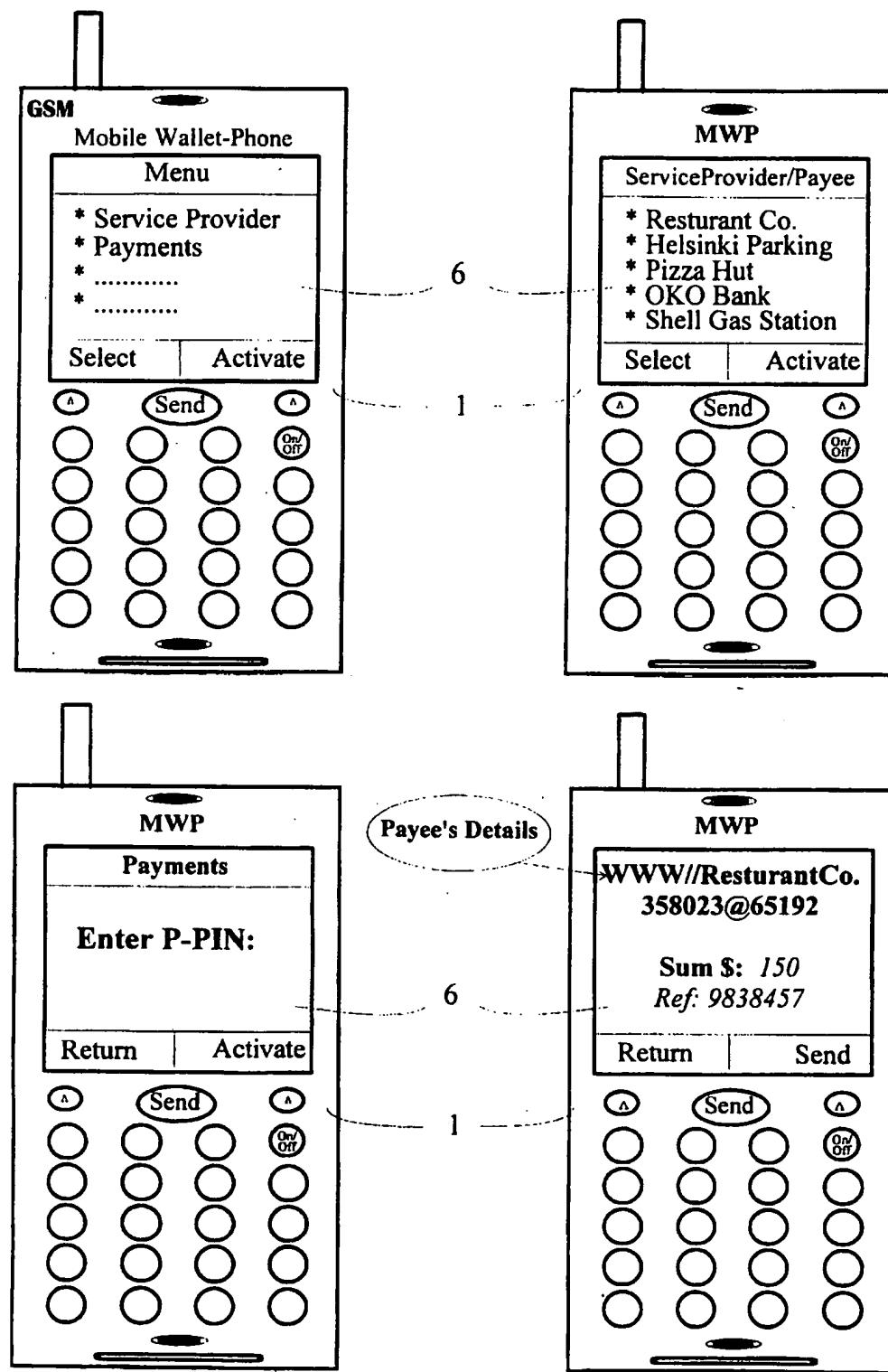


Example 4:

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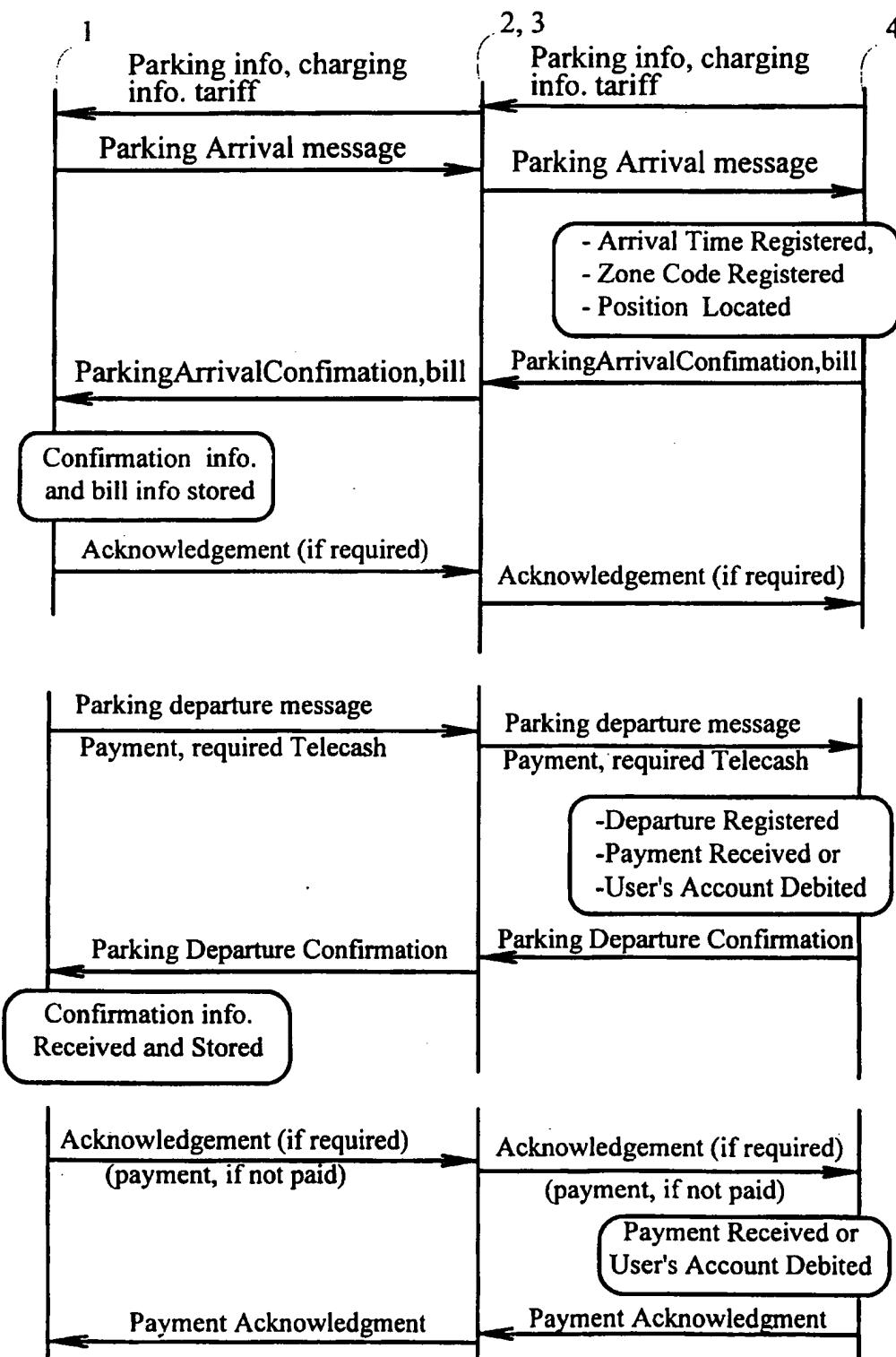
FIG. 6



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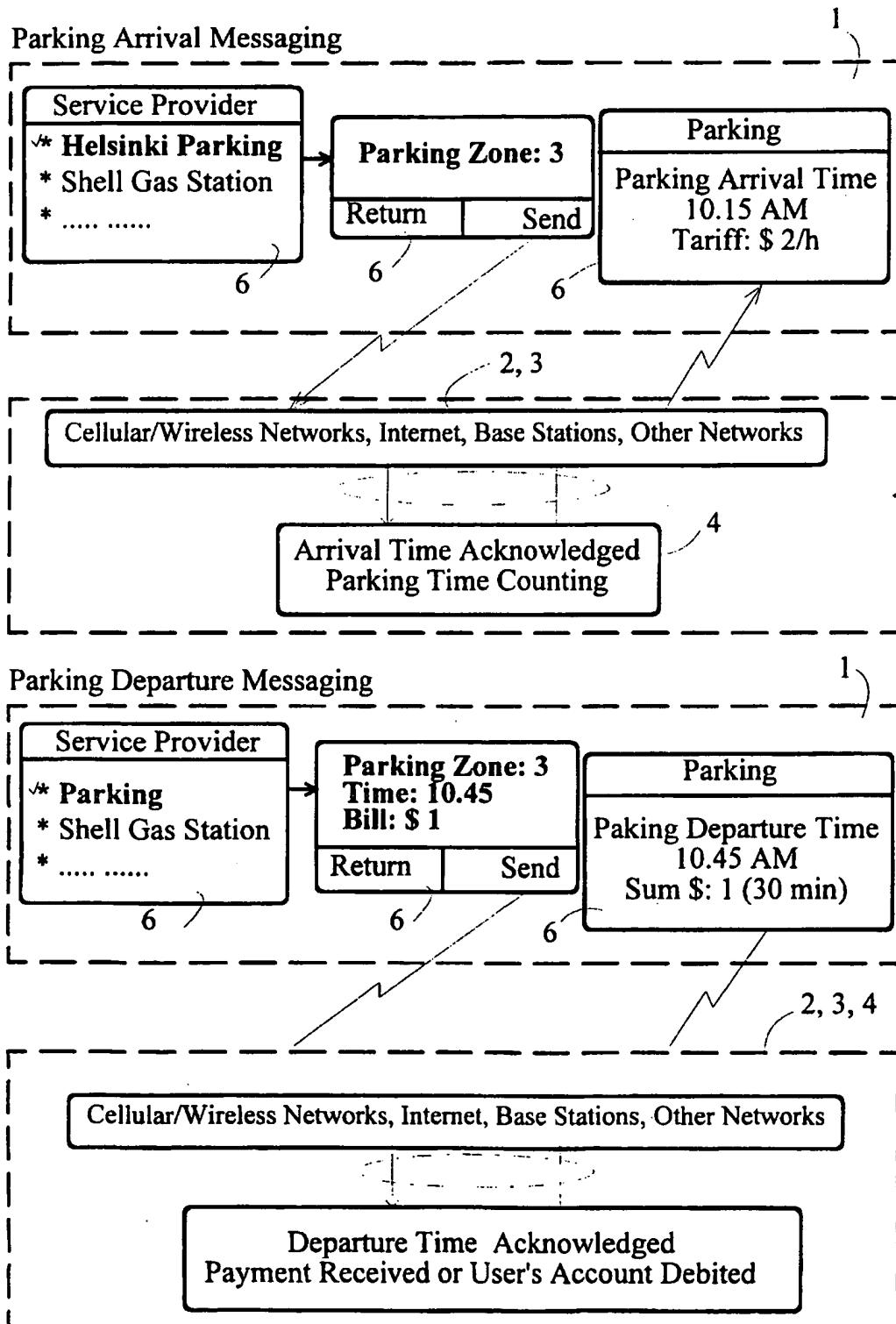
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FIG. 7

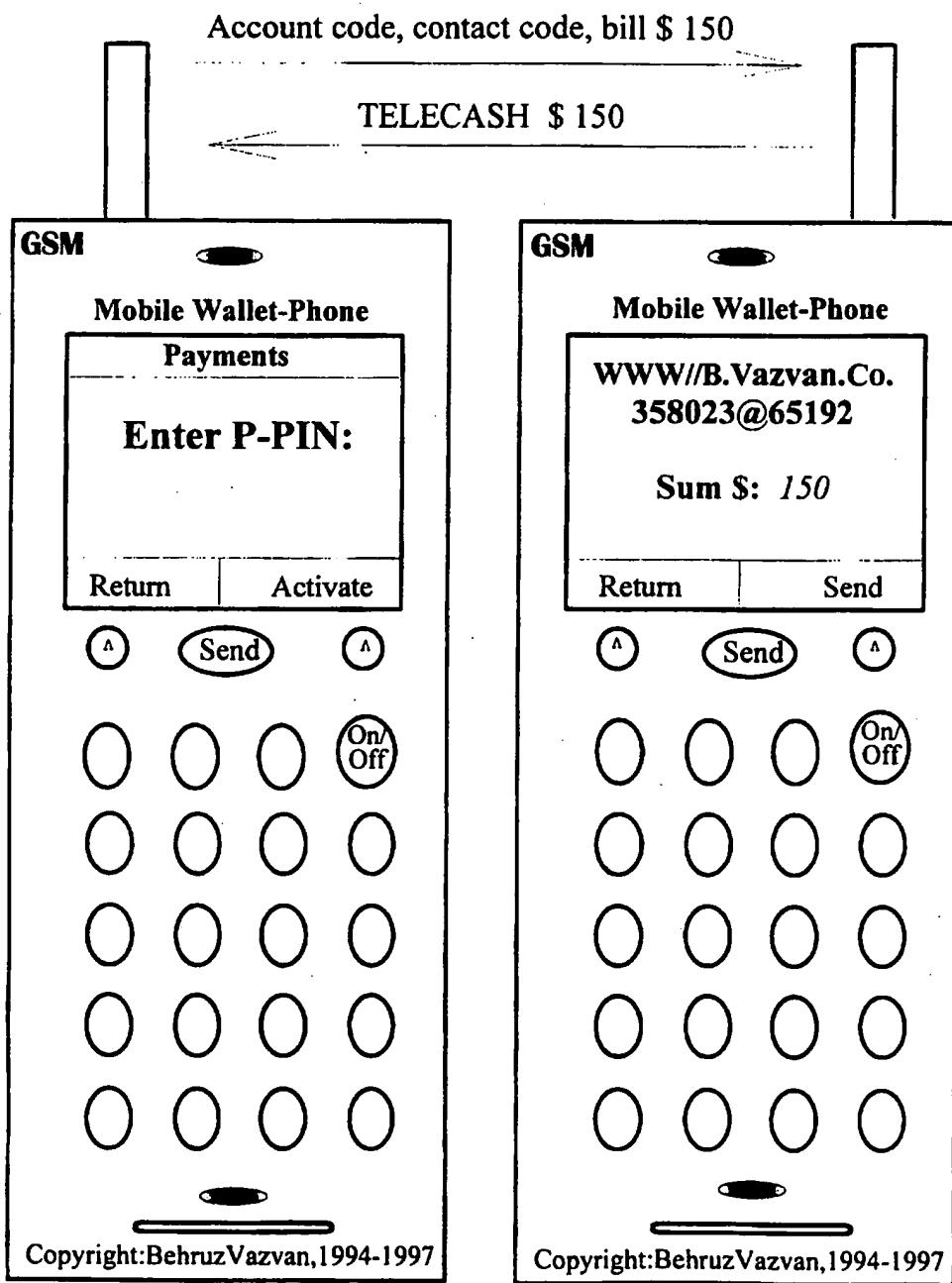


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FIG. 8**SUBSTITUTE SHEET (Rule 26)**

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FIG. 9**SUBSTITUTE SHEET (Rule 26)**

INTERNATIONAL SEARCH REPORT

International application No.

PCT/FI 97/00315

A. CLASSIFICATION OF SUBJECT MATTER

IPC6: G07F 7/08, G07F 19/00, G06F 17/60 // G06F 157:00
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B. FIELDS SEARCHED

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 9613814 A1 (VAZVAN, BEHRUZ), 9 May 1996 (09.05.96) --	1-10
A	WO 9411849 A1 (VATANEN, HARRI), 26 May 1994 (26.05.94) --	1-10
A	US 5030806 A (THIERRY COLLIN), 9 July 1991 (09.07.91) --	1-10
P,A	WO 9632700 A1 (AU-SYSTEM), 17 October 1996 (17.10.96) -----	1-10

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Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)		Publication date
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